

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) A probe for the treatment of glaucoma, comprising: a probe tip configured to access the trabecular meshwork; an aspiration port on said probe tip; and a laser providing light energy to said probe tip sufficient to ablate said trabecular meshwork.
2. (Withdrawn) The probe of claim 1, additionally comprising a handle supporting said probe tip, and wherein said laser is contained within said handle.
3. (Withdrawn) The probe of claim 1, further comprising an irrigation port on said probe tip.
4. (Withdrawn) The probe of claim 3, further comprising a lumen extending through said probe tip and terminating at said irrigation port.
5. (Withdrawn) The probe of claim 1, further comprising a lumen extending through said probe tip and terminating at said aspiration port.
6. (Withdrawn) The probe of claim 1, further comprising a combined irrigation and aspiration port on said probe tip.
7. (Withdrawn) The probe of claim 6, further comprising a lumen extending through said probe tip and terminating at said combined irrigation and aspiration port.
8. (Withdrawn) The probe of claim 1, further comprising an optical fiber for

conducting said light energy from said laser to said probe tip.

9. (Withdrawn) The probe of claim 8, wherein said optical fiber is a sapphire fiber.

10. (Withdrawn) The probe of claim 8, wherein said optical fiber is a fused silica fiber.

11. (Withdrawn) The probe of claim 1, additionally comprising a shield configured to protect Schlemm's canal from damage by said laser light energy.

12. (Withdrawn) The probe of claim 11, wherein said shield and said laser are separated by an opening sufficient to accommodate said trabecular meshwork.

13. (Withdrawn) The probe of claim 11, wherein said shield is sharp enough to penetrate said trabecular meshwork.

14. (Withdrawn) The probe of claim 11 wherein said shield is sized to guide said probe tip along Schlemm's canal.

15. (Withdrawn) The probe of claim 11, wherein said shield extends at a right angle from said probe tip.

16. (Withdrawn) The probe of claim 15, wherein said shield lies on the axis of said laser.

17. (Withdrawn) The probe of claim 1, wherein said laser comprises an Er:YAG laser.

18. (Withdrawn) The probe of claim 1 wherein said probe tip is configured for

goniectomy.

19. (Original) A probe for the treatment of glaucoma, comprising: a probe tip configured to access the trabecular meshwork; an aspiration port on said probe tip; and a tissue ablator disposed on said probe tip and configured to ablate said trabecular meshwork.

20. (Withdrawn) The probe of claim 19 wherein said probe tip is configured for schlemmectomy.

21. (Withdrawn) The probe of claim 19 wherein said probe tip is configured for goniectomy.

22. (Withdrawn) The probe of claim 19, further comprising an irrigation port on said probe tip.

23. (Withdrawn) The probe of claim 22, further comprising a lumen extending through said probe tip and terminating at said irrigation port.

24. (Withdrawn) The probe of claim 19, further comprising a lumen extending through said probe tip and terminating at said aspiration port.

25. (Withdrawn) The probe of claim 19, further comprising a combined irrigation and aspiration port on said probe tip.

26. (Withdrawn) The probe of claim 25, further comprising a lumen extending through said probe tip and terminating at said combined irrigation and aspiration port.

27. (Withdrawn)The probe of claim 19, further comprising an electrical lead lumen extending through said probe, which runs between a distal port and a proximal port.

28. (Withdrawn)The probe of claim 27, wherein electrical leads extend between said tissue ablator and said proximal port through said electrical lead lumen.

29. (Withdrawn)The probe of claim 19, wherein said tissue ablator comprises a cautery element.

30. (Withdrawn)The probe of claim 29, wherein said cautery element comprises a radio frequency (RF) electrode.

31. (Withdrawn)The probe of claim 19, wherein said tissue ablator comprises an ultrasound transducer.

32. (Withdrawn)The probe of claim 31 wherein said tissue ablator comprises an array of ultrasound transmissive panels.

33. (Withdrawn) The probe of claim 19, wherein said tissue ablator comprises a piezoceramic ultrasound transducer.

34. (Withdrawn)The probe of claim 19, wherein said tissue ablator comprises a piezoelectric transducer having at least a first electrode on an exposed outer surface of said transducer.

35. (Withdrawn)The probe of claim 19, wherein said tissue ablator comprises a cryogenic element.

36. (Withdrawn)The probe of claim 19, wherein said tissue ablator comprises a monopolar electrode system.

37. (Original)The probe of claim 19, wherein said tissue ablator comprises a bipolar electrode system.

38.(Withdrawn) The probe of claim 19, further comprising a power source.

39. (Withdrawn)The probe of claim 38, wherein said power source is a current power source.

40. (Withdrawn)The probe of claim 39, wherein said current power source provides radio frequency power.

41. (Withdrawn)The probe of claim 38, wherein said power source provides ultrasonic energy.

42. (Withdrawn)The probe of claim 38, wherein said power source provides sonic energy.

43. (Withdrawn)The probe of claim 38, wherein said power source provides electrical power.

44. (Withdrawn) The probe of claim 19, wherein a portion of the length of said probe tip is sized to fit within schlemm's canal.

45. (Withdrawn) The probe of claim 19, wherein said probe tip is hook-shaped.

46. (Withdrawn) The probe of claim 45, wherein said tissue ablator is at the bite of said hook-shaped probe tip.

47. (Withdrawn) The probe of claim 19, wherein said probe tip is configured for goniotomy.

48. (Withdrawn) The probe of claim 19, wherein said probe tip is configured for schlemmectomy.

49. (Withdrawn) A method for treating glaucoma, comprising: inserting a probe into an eye; ablating a region of the trabecular meshwork of said eye with said probe; aspirating said region of the trabecular meshwork of said eye with said probe; and removing said probe.

50. (Withdrawn) The method of claim 49, further comprising irrigating said eye.

51. (Withdrawn) The method of claim 49, wherein said region of the trabecular meshwork comprises at least half of said trabecular meshwork.

52. (Withdrawn) A method for treating glaucoma, comprising: inserting a probe into an eye; aspirating a region of the trabecular meshwork of said eye with said probe; and removing said probe.

53. (Withdrawn) The method of claim 52, further comprising aspirating said region of the trabecular meshwork of said eye from said eye.

54. (Withdrawn) The method of claim 53, wherein said region of the trabecular meshwork aspirated from said eye comprises at least 50% of said trabecular meshwork.

55. (Withdrawn) The method of claim 53, further comprising irrigating said eye.

56. (Withdrawn) A probe for the treatment of glaucoma, comprising: a probe tip configured to access the trabecular meshwork; a tissue ablator disposed on said probe tip and configured to ablate said trabecular meshwork; an aspiration port on said probe tip; and a lumen extending through said probe tip and terminating at said aspiration port, wherein said probe tip is configured for goniotomy.

57. (Withdrawn) The probe of claim 56, wherein said tissue ablator is a cautery element.

58. (Withdrawn) The probe of claim 56, wherein said tissue ablator is selected from the group consisting of a radio frequency (RF) electrode, ultrasound transducer, array of ultrasound transmissive panels, piezoceramic ultrasound transducer, and piezoelectric transducer.

59. (Withdrawn) The probe of claim 56, further comprising an irrigation port on said probe tip.

60. (Withdrawn) The probe of claim 59, further comprising an irrigation lumen extending through said probe tip and terminating at said irrigation port.

61. (Withdrawn) The probe of claim 56, further comprising an electrical lead lumen extending through said probe, which runs between a distal port and a proximal port.

62. (Withdrawn) The probe of claim 61, wherein electrical leads extend between said tissue ablator and said proximal port through said electrical lead lumen.

63. (Withdrawn) The probe of claim 56, further comprising a power source.

64. (Withdrawn) The probe of claim 63, wherein said power source is selected from the group consisting of radio frequency, ultrasonic, sonic, and electrical energy.

65. (Withdrawn) A probe for the treatment of glaucoma, comprising: a probe tip configured to access the trabecular meshwork; a tissue ablator disposed on said probe tip and configured to ablate said trabecular meshwork; an aspiration port on said probe tip; an aspiration lumen extending through said probe tip and terminating at said aspiration port, wherein said probe tip is configured for schlemmectomy, said probe tip comprising two parallel arms, wherein a first arm is located directly above a second arm.

66. (Withdrawn) The probe of claim 65, wherein said tissue ablator is disposed on the lower arm of said probe tip.

67. (Withdrawn) The probe tip of claim 65, wherein said tissue ablator is a cautery element.

68. (Withdrawn) The probe tip of claim 65, wherein said tissue ablator is selected from the group consisting of a radio frequency (RF) electrode, ultrasound transducer, array of ultrasound transmissive panels, piezoceramic ultrasound transducer, and piezoelectric transducer.

69. (Withdrawn) The probe of claim 56, further comprising an irrigation port on said probe tip.

70. (Withdrawn) The probe of claim 69, further comprising an irrigation lumen extending through said probe tip and terminating at said irrigation port.

71. (Withdrawn) The probe of claim 56, further comprising an electrical lead lumen extending through said probe, which runs between a distal port and a proximal port.

72. (Withdrawn) The probe of claim 71, wherein electrical leads extend between said tissue ablator and said proximal port through said electrical lead lumen.

73. (Withdrawn) The probe of claim 56, further comprising a power source.

74. (Withdrawn) The probe of claim 73, wherein said power source is selected from the group consisting of radio frequency, ultrasonic, sonic, and electrical energy.

75. (Withdrawn) A probe for the treatment of glaucoma, comprising: a probe tip having a hollow chamber configured to access the trabecular meshwork; a rotatable shaft disposed within said hollow chamber; and a cutting head on the distal end of said rotatable shaft.

76. (Withdrawn) The probe of claim 75, wherein said hollow chamber is in fluid communication with an irrigation supply.

77. (Withdrawn) The probe of claim 75, further comprising an aspiration lumen extending through said probe tip.

78. (Withdrawn) A probe for the treatment of glaucoma, comprising: a probe tip

having a hollow chamber configured to access the trabecular meshwork; a cutting sleeve disposed within said hollow chamber; and a footplate formed at the distal end of said probe tip.

79. (Withdrawn) The probe of claim 78, further comprising a cutting blade integrally formed at the distal end of said cutting sleeve.

80. (Withdrawn) The probe of claim 78, wherein said cutting sleeve is hollow.

81. (Withdrawn) The probe of claim 78, further comprising a combined irrigation and aspiration port.

82. (Withdrawn) The probe of claim 81, wherein said hollow cutting sleeve forms an aspiration lumen, extending through said probe tip and terminating near said irrigation and aspiration port.

83. (Withdrawn) The probe of claim 78, further comprising an irrigation lumen.

84. (Withdrawn) A method for treating glaucoma, comprising: inserting a probe into an eye; mechanically cutting a region of the trabecular meshwork of said eye with said probe; aspirating said region of the trabecular meshwork with said probe; and removing said probe.

85. (Withdrawn) The method of claim 84, further comprising removing said region of the trabecular meshwork of said eye from said eye.

86. (Withdrawn) The method of claim 84, further comprising irrigating said eye.

87. (Withdrawn) The method of claim 85, wherein said region of the trabecular

meshwork removed from said eye comprises at least 50% of said trabecular meshwork.

88. (Withdrawn) A device for treating glaucoma, said device comprising:
an elongate probe having a probe tip configured to be advanced into Schlemm's canal;

a tissue ablator for ablating the trabecular meshwork; and,
a protector configured such that, when the probe is advanced into Schlemm's canal, the protector will deter the tissue ablator from causing damage to endothelial cells lining the scleral wall of Schlemm's canal while the tissue ablator substantially ablates the trabecular meshwork.

89. (Withdrawn) A device according to Claim 1 wherein the tissue ablator comprises a laser.

90. (Withdrawn) A device according to Claim 1 wherein the tissue ablator comprises a rotating cutting member.

91. (Withdrawn) A device according to Claim 1 wherein the tissue ablator comprises a radiofrequency electrode.

92. (Withdrawn) A device according to Claim 1 wherein the tissue ablator comprises an ultrasound transducer.

93. (Withdrawn) A device according to Claim 1 wherein the tissue ablator comprises an array of ultrasound transmissive panels.

94. (Withdrawn) A device according to Claim 1 wherein the tissue ablator comprises a piezoelectric ultrasound transducer.

95. (Withdrawn) A device according to Claim 1 wherein the tissue ablator comprises a piezoelectric transducer.

96. (Withdrawn) A device according to Claim 1 wherein the protector comprises a portion of the probe.

97. (Withdrawn) A device according to Claim 1 wherein the protector comprises a foot plate.

98. (Withdrawn) A device according to Claim 1 wherein the elongate probe is substantially L shaped and has a proximal and distal portion, the distal portion extending generally perpendicularly from the distal end of the proximal portion.

99. (Withdrawn) A device according to Claim 11 wherein the protector and the tissue ablator are located substantially opposite one another on the distal portion of the probe.

100. (Withdrawn) A device according to Claim 1 further comprising:
an aspiration port.

101. (Withdrawn) A device according to Claim 1 further comprising:
an irrigation port.

102. (Withdrawn) A device according to Claim 1 further comprising:
an aspiration/irrigation port.

103. (Withdrawn) A device according to Claim 1 wherein the distal end of the elongate probe is configured to advance through Schlemm's canal and to penetrate through the tissue of the trabecular meshwork.

104. (Withdrawn) A method for treating glaucoma, the method comprising the steps of:

a) providing a glaucoma treatment device that comprises i) an elongate probe having a probe tip configured for insertion into Schlemm's canal, ii) a tissue ablator for ablating the trabecular meshwork, and iii) a protector;

b) advancing the elongate probe into Schlemm's canal such that the protector is positioned adjacent to the scleral wall of Schlemm's canal; and

c) using the tissue ablator to ablate at least a portion of the trabecular meshwork while the protector shields the endothelial cells lining the scleral wall of Schlemm's canal from being substantially damaged by the ablator.

105. (Withdrawn) A method according to Claim 17 wherein the tissue ablator comprises a laser and wherein Step C comprises the performance of laser ablation of at least a portion of the trabecular meshwork.

106. (Withdrawn) A method according to Claim 17 wherein the tissue ablator comprises a rotating cutting member and wherein Step C comprises using the rotating cutting member to sever at least a portion of the tissue that forms the trabecular meshwork.

107. (Withdrawn) A method according to Claim 17 wherein the tissue ablator comprises a radiofrequency electrode and wherein Step C comprises using the radiofrequency electrode to ablate at least a portion of the trabecular meshwork.

108. (Withdrawn) A method according to Claim 17 wherein the tissue ablator comprises an ultrasound transducer and wherein Step C comprises using the ultrasound transducer to ablate at least a portion of the trabecular meshwork.

109. (Withdrawn) A method according to Claim 17 wherein the tissue ablator comprises an array of ultrasound transmissive panels and wherein Step C comprises using the ultrasound transmissive panels to ablate at least a portion of the trabecular meshwork.

110. (Withdrawn) A method according to Claim 17 wherein the tissue ablator comprises a piezoelectric transducer and wherein Step C comprises using the piezoelectric transducer to ablate at least a portion of the trabecular meshwork.

111. (Withdrawn) A method according to Claim 23 wherein the piezoelectric transducer is a piezoelectric ultrasound transducer.

112. (Withdrawn) A method according to Claim 17 wherein Step C further comprises aspirating the severed tissue through an aspiration port.

113. (Withdrawn) A method according to Claim 25 wherein the aspiration port is integrally provided with the probe.

114. (Withdrawn) A method according to Claim 17 wherein Step C further comprises flushing a fluid through an irrigation port into Schlemm's canal.

115. (Withdrawn) A method according to Claim 27 wherein the irrigation port is integrally provided with the probe.

116. (Withdrawn) A method according to Claim 17 wherein Step C further comprises aspirating and irrigating fluid through the probe tip.

117. (Withdrawn) A device for treating glaucoma, said device comprising:

- an elongate probe having a probe tip configured to be advanced into Schlemm's canal;

- an energy source on the probe for substantially removing the trabecular meshwork; and

- a protective member for preventing damage to Schlemm's canal while removing the trabecular meshwork.

118. (Withdrawn) A device for treating glaucoma, said device comprising:

- an elongate probe;

- a bipolar electrode that is useable to form an opening in the trabecular meshwork such that fluid may drain through said opening into Schlemm's canal; and,

- a protector configured to be advanced into Schlemm's canal, said protector being configured and positioned in relation to the bipolar electrode such that the protector will substantially protect cells lining the scleral wall of Schlemm's canal from being substantially damaged by energy that emanates from the bipolar electrode.

119. (Withdrawn) A device according to Claim 118 wherein the protector comprises a foot plate.

120. (Withdrawn) A device according to claim 118 wherein the protector is non-parallel to a longitudinal axis of the elongate probe.

121. (Withdrawn) A device according to Claim 118 wherein the elongate probe comprises a proximal portion and distal portion, the distal portion comprising the protector, said distal portion being non-parallel to the proximal portion.

122. (Withdrawn) A device according to claim 118 wherein the probe is substantially L shaped, having a proximal portion and a distal portion, wherein the distal portion comprising the protector, said distal portion being generally perpendicular to the proximal portion.

123. (Withdrawn) A device according to Claim 118 further comprising at least one lumen extending through at least a portion of the probe, said at least one lumen terminating in at least one port that becomes positioned within the eye during operation of the device.

124. (Withdrawn) A device according to Claim 121 having an irrigation lumen that terminates in an irrigation port and an aspiration lumen that terminates in an aspiration port.

125. (Withdrawn) A system comprising a device according to claim 118 in combination with a power source for delivering power to said bipolar electrode.

126. (Withdrawn) A system according to claim 123 wherein the bipolar electrode is useable to substantially ablate at least a portion of the trabecular meshwork.

127. (Withdrawn) A device according to claim 118 wherein the probe comprises a handle configured to be grasped by the human hand.

128. (Withdrawn) A device according to claim 125 further comprising at least one switch on said handle for at least actuating and deactuating the bipolar electrode.

129. (Withdrawn) A system comprising a device according to claim 118 further comprising a foot pedal in communication with said device, said foot pedal being usable for at least actuating and deactuating the bipolar electrode.

130. (Withdrawn) A device according to claim 118 wherein the protector has a tip that is configured to penetrate trabecular meshwork, thereby facilitating advancement of the protector into Schlemm's canal.

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